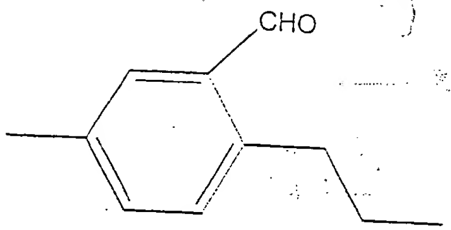
IN THE CLAIMS:

1. (Currently Amended) ~~[A one step]~~ The chemical vapor deposition process of claim 2, wherein ~~[such that]~~ the deposited coating comprises at least one interface containing chemical groups having sufficient intrinsic chemical reactivity to react with target molecules.

2. (Previously Presented) A chemical vapor deposition process; said process includes coating a substrate with a reactive coating that includes repeating units selected from a group consisting of:



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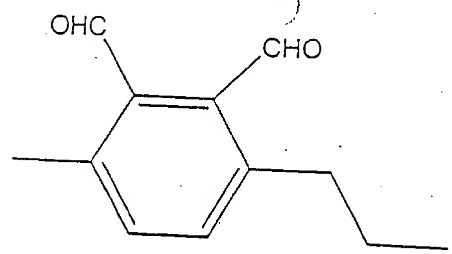

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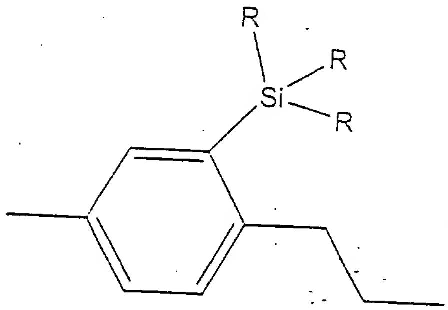

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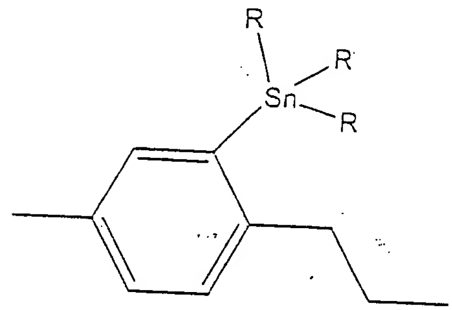

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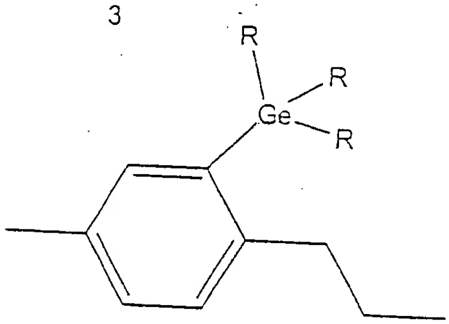

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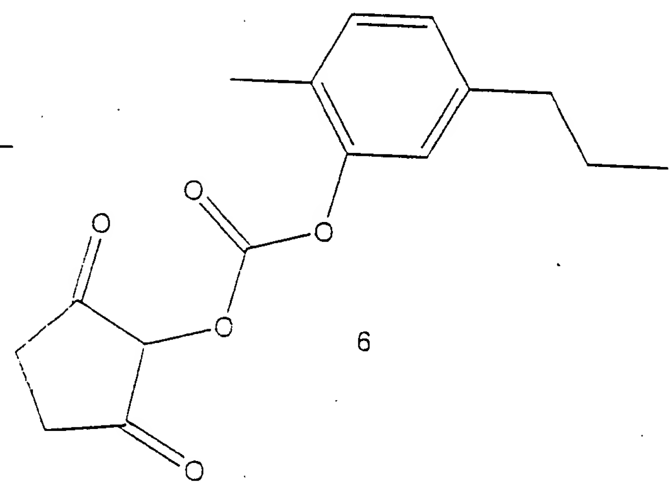

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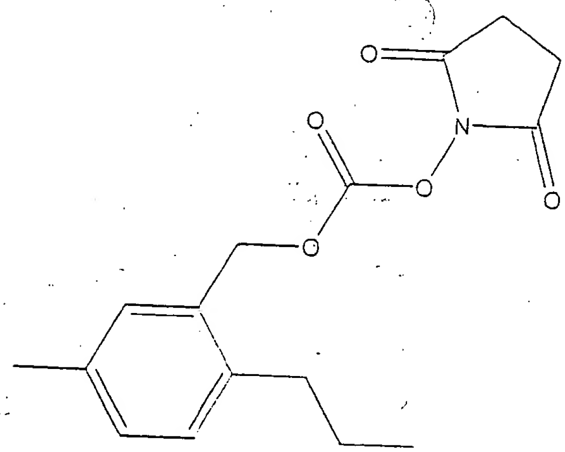
R: hydrogene atom, alkyl, aryl, benzyl, halogen, hydroxyl, alkoxyl



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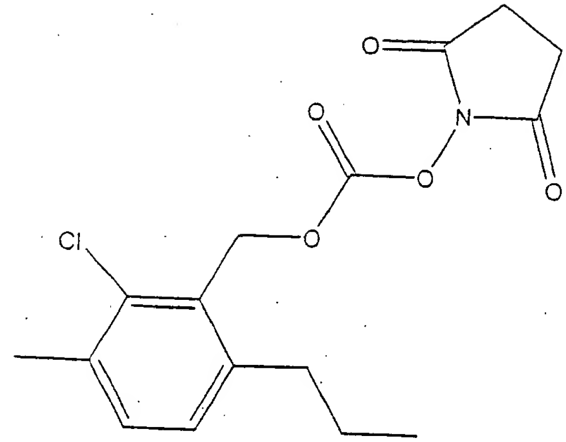

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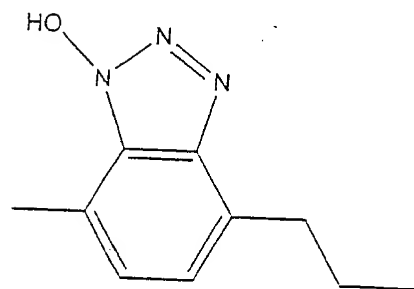

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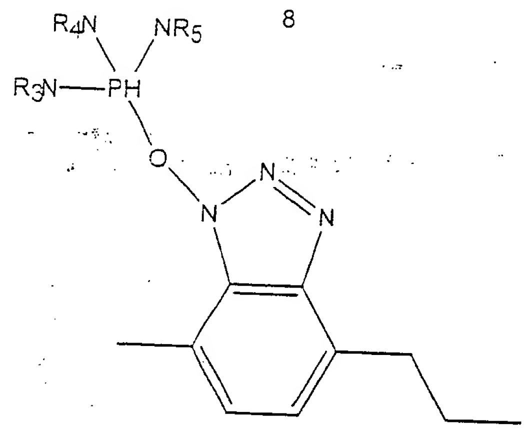

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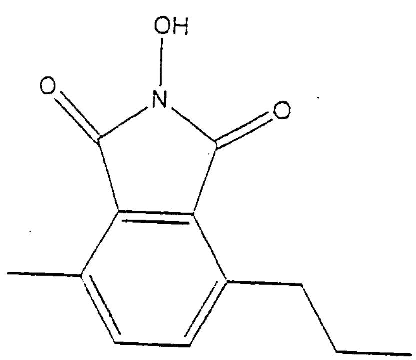

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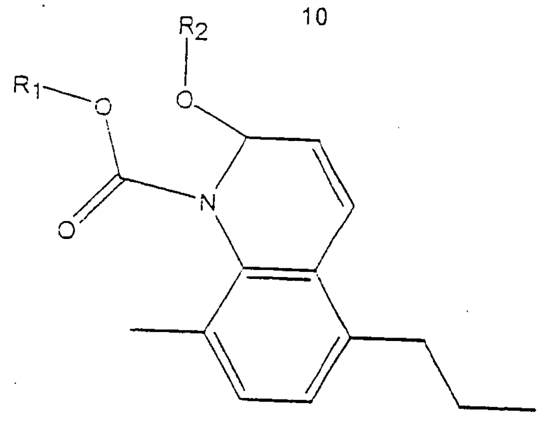

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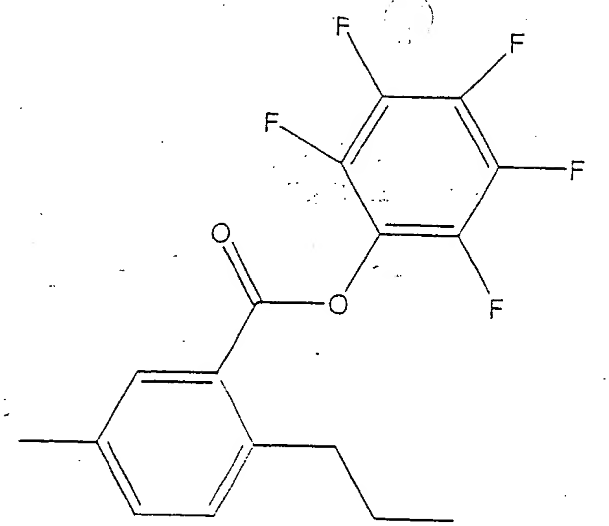
R_1, R_2, R_3, R_4, R_5 independantly are: hydrogene atom; alkyl, aryl, benzyl



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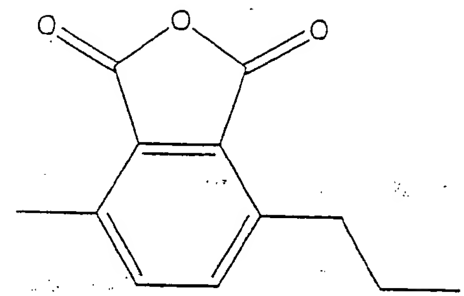

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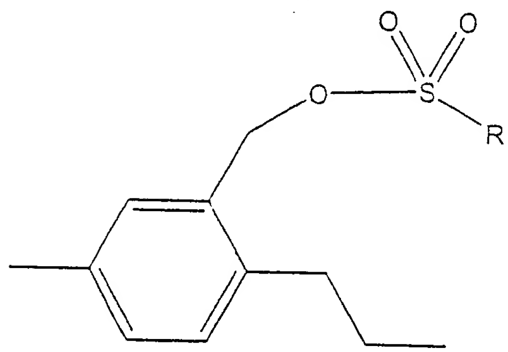

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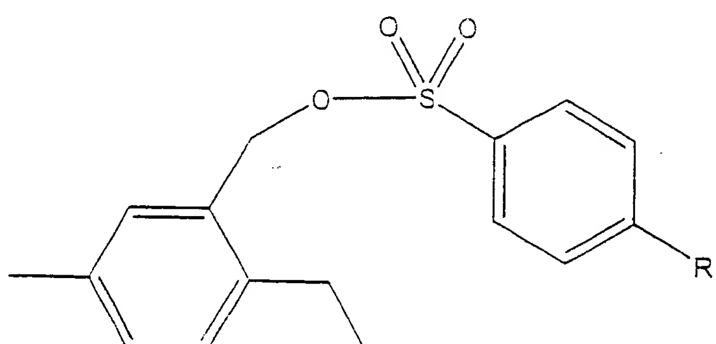
R: F, CH_3, CF_3, C_4F_9, CH_2CF_3, C_2F_5, $(CH_2)_nNR'_2$ (R': hydrogene atom, alkyl, aryl, benzyl)



R: CH_3, H, CF_3, NO_2, Br, F, Cl, I

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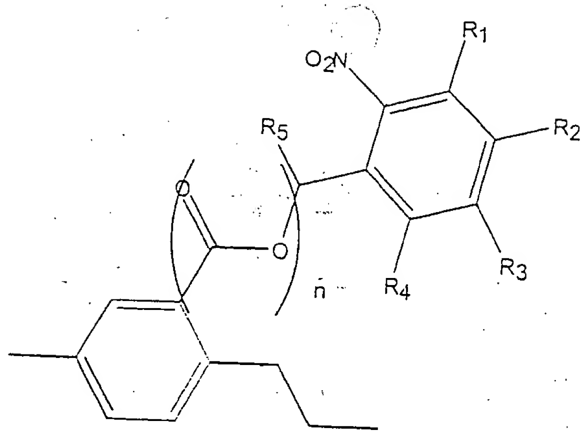

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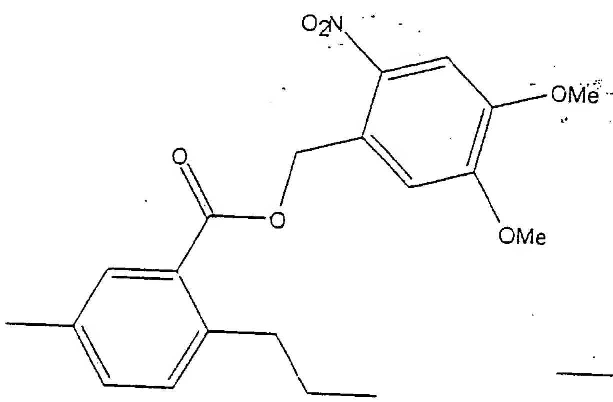
R_1, R_2, R_3, R_4 independantly are: hydrogene atom, alkyl, aryl, benzyl, halogen, hydroxyl, alkoxyl, thiol, thioether, amino, nitro
n: 0 or 1
R_5: hydrogene atom, alkyl, alkenyl, benzyl, halogene, alkoxyl,



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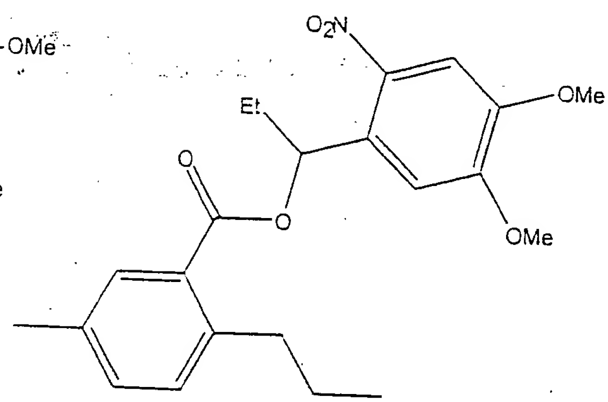

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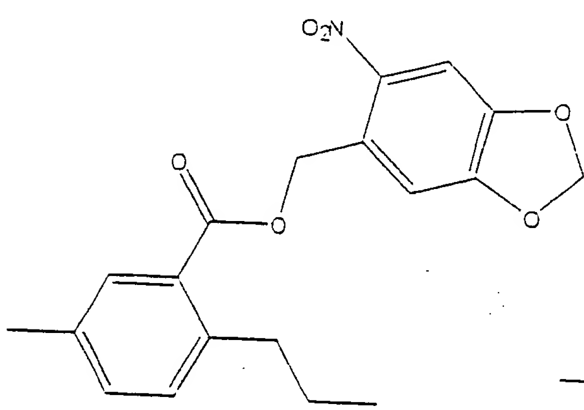

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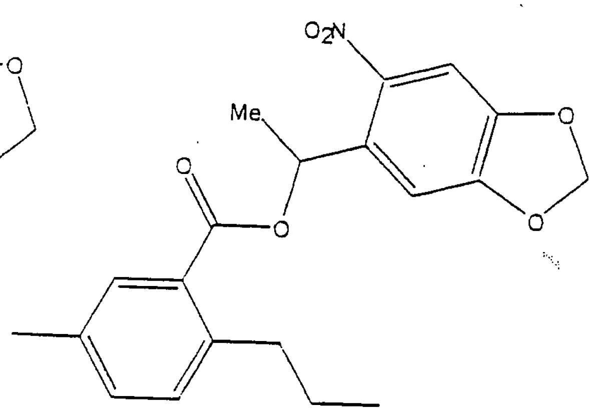

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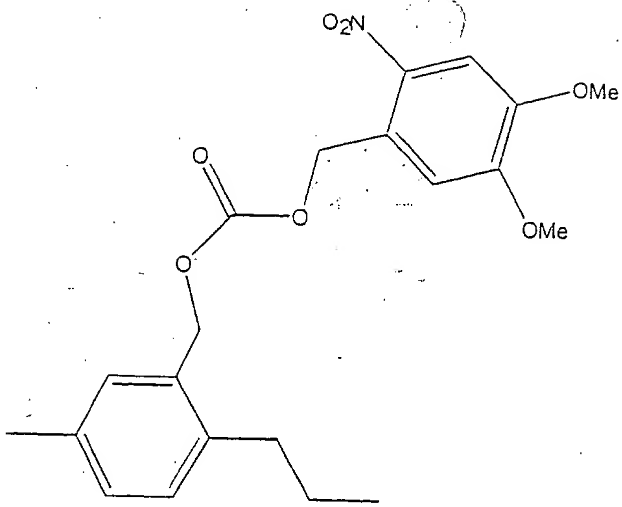

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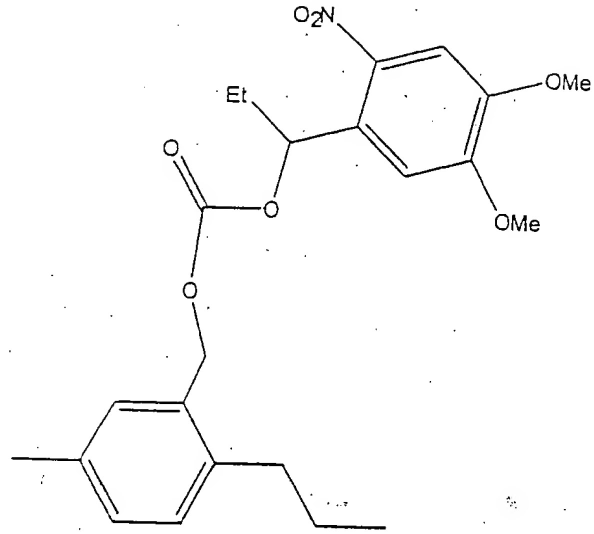

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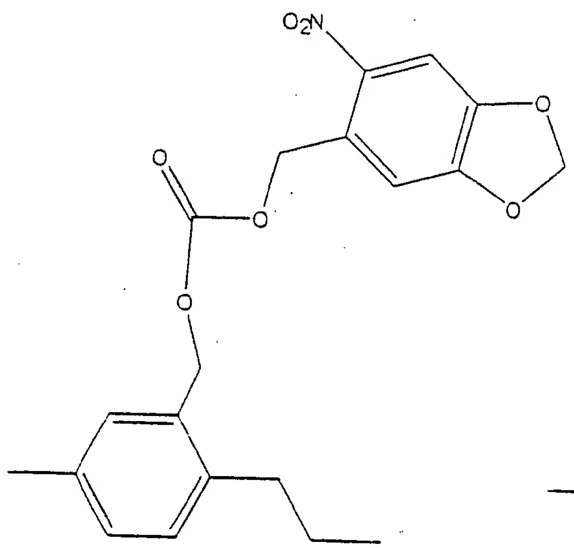

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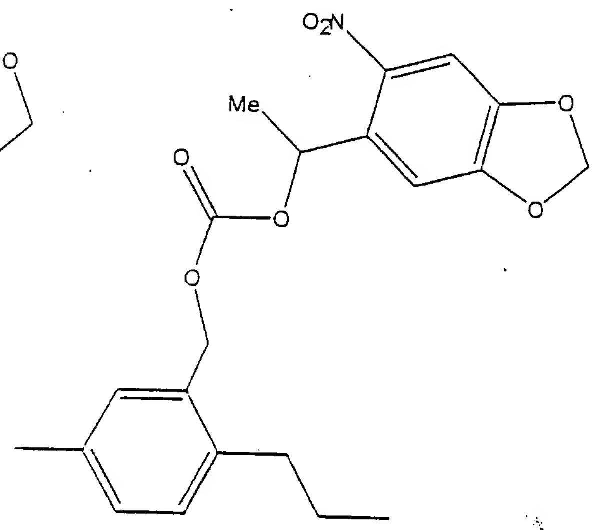

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3. (Original) The chemical vapor deposition process of claim 1, wherein the interfaces are based on poly[para-xylylenes]s or copolymers thereof.

4. (Original) The chemical vapor deposition process of the claim 1, wherein [2.2]paracyclophanes are polymerized during the chemical vapor deposition process.

5. (Original) The chemical vapor deposition process as defined in claim 1, wherein the polymeric coating is poly[*para*-xylylene carboxylic acid pentafluorophenolester-co-*para*-xylylene].

6. (Original) The chemical vapor deposition process of claim 1, wherein the coating includes interfaces containing functional groups, which are capable of reacting with functional groups of target molecules resulting in stable linkages.

7. (Original) The chemical vapor deposition process of claim 1, wherein the coating includes interfaces containing functional groups, where illumination with light was used to induce reaction with functional groups of target molecules resulting in stable linkages.

8. (Currently Amended) The chemical vapor deposition process of claim ~~[7]~~ 2, wherein photolithography is used to create immobilization pattern on a substrate.

9. (Currently Amended) The chemical vapor deposition of claim ~~[1]~~ 2, wherein a [2.2]paracyclophane is deposited onto a substrate, said process including:

providing purified [2.2]paracyclophane;

sublimating the [2.2]paracyclophane under a reduced pressure of less than 100 Pa;

heating the sublimated material to approximately 550°C - 900°C to cleave C-C bonds to produce monomers;

polymerizing the monomers which are absorbed on the substrate at a temperature below 150°C to produce a topologically uniform polymer film.

10. (Original) The chemical vapor deposition process of claim 9, wherein the sublimation of [2.2]paracyclophane 4-carboxylic acid pentafluorophenolester is conducted at a pressure of 0.2 mbar and at a temperature between 120 to 130°C and the polymerization temperature is below 45°C.

11. (Original) The chemical vapor deposition process of claim 10 wherein the polymer film is transparent.

12. (Original) The chemical vapor deposition process of claim 10, wherein the polymeric film has a thickness between 40 and 2000 nm.

13. (Currently Amended) The chemical vapor deposition process of claim ~~[1]~~ <u>2</u>, wherein said coating is applied in a pattern on a substrate.

14. (Currently Amended) A chemical vapor deposition coating process as claimed in claim ~~[1]~~ <u>2</u>, including microstructuring by stamping a surface of a substrate to produce a pattern.

15. (Original) The chemical vapor deposition process of claim 1, wherein the polymer interface is patterned by spatially restricted attachment of biotin-ligands.

16. (Original) The chemical vapor deposition process of claim 1, wherein the polymer interface is patterned by spatially restricted attachment of peptides.

17. (Original) The chemical vapor deposition process of claim 1, wherein the polymer interface is patterned by spatially restricted attachment of proteins.

18. (Original) The chemical vapor deposition process of claim 1, wherein the polymer interface is patterned by spatially restricted attachment of oligonucleotides.

19. (Original) The chemical vapor deposition process of claim 1, wherein the polymer interface is patterned by spatially restricted attachment of DNA.

20. (Original) The chemical vapor deposition process of claim 1, wherein the polymer interface is patterned by spatially restricted attachment of polysaccharides.

21. (Currently Amended) The chemical vapor deposition process of claim ~~[1]~~ 2 further including patterning the surface of the substrate using layer-by-layer adsorption.

22. (Currently Amended) A chemical vapor deposition process of claim ~~[1]~~ 2, wherein (+)-biotinyl-3,6,9-trioxaundecanediamine was used for coating different patterns of substrates with poly[*para*-xylylene carboxylic acid pantaflourophenolester-co-*para*-xylylene].

23. (Currently Amended) The chemical vapor deposition process as claimed in claim ~~[1]~~ 2, further including masking a surface of the substrate to produce a patterned coating having defined areas, each area having different functional groups.

24. (Currently Amended) The chemical vapor deposition process as claimed in claim ~~[1]~~ <u>2</u> further including a plasma treatment of the substrate prior to the chemical vapor deposition process.

25. (Original) The chemical vapor deposition process as claimed in claim 1, wherein a polymer interface containing chemical groups having sufficient intrinsic reactivity to react with target molecules is created and the chemical groups show an anisotropic distribution on the surface.

26. (Original) The chemical vapor deposition process as claimed in claim 25, wherein a gradient of reactivity is formed.

27. (Original) The chemical vapor deposition process as claimed in claim 1, wherein the deposited coating comprises co-polymers with at least two different types of chemical groups each having sufficient intrinsic reactivity to react with target molecules.

28. (Original) The chemical vapor deposition process as claimed in claim 1, wherein the deposited coating comprises co-polymers of at least one polymer with at least one type of chemical groups having sufficient intrinsic reactivity to react with target molecules and of at least one polymer that has no sufficient intrinsic reactivity to react with target molecules.

29. (Original) The chemical vapor deposition process as claimed in claim 28 wherein the polymer that has no sufficient intrinsic reactivity to react with target molecules is a poly(*p*-xylylene).

30. (Original) The chemical vapor deposition process as claimed in claim 28 wherein the polymer that has no sufficient intrinsic reactivity to react with target molecules is a functionalized poly(*p*-xylylene).

31. (Original) The chemical vapor deposition process as claimed in claim 28 wherein the polymer that has no sufficient intrinsic reactivity to react with target molecules is a poly(olefin).

32. (Original) Preparation of an electrophoresis chamber including depositing a polymer coating by chemical vapor deposition as claimed in claim 1, said coating including functional groups to enhance surface properties.